

MMP Investigation of Arthur Kill 2 and 3

Requestor [REDACTED]
Facility Name Arthur Kill 2 and 3
Date of Request January 27, 2003
Type of Facility NG Generator
Topic of Investigation Units were unable to run due to having no fuel available
Investigator: David L. Smith
Investigation Initiation Date January 27, 2003 **Completion Date:** August 22, 2003
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Case Number 20030128122714

Overview:

Arthur Kill 2 ("AK 2") is a multiple-fuel steam generator with a maximum operating capacity of 350 MW. The unit was put into service in August of 1959. Arthur Kill 3 ("AK 3") is a multiple-fuel steam generator with a maximum operating capacity of 500 MW. The unit was put into service in June of 1969. Both units have had the capability to burn coal, oil, and natural gas or a mixture of oil and natural gas at various times, but they currently use natural gas as their sole fuel. NRG purchased the units from Consolidated Edison Company of New York, Inc. ("Con Ed") in 1999. The units are located in the borough of Staten Island on the Arthur Kill. They are owned and operated by NRG.

The relevant operating facts are as follows:

On January 18, AK 2 was selected in the Day-Ahead Market ("DAM") to generate at its minimum level for January 19 for hours beginning ("HB") 09 through and including HB 23. The AK 2 unit did not run on January 19.

On January 19, Con Ed requested AK 3 to start as soon as reasonable to be on for January 20, for local reliability reasons. NRG initially did not run the unit due to lack of gas, but later agreed to run the unit after Con Ed offered to make gas available.

The investigation focused on the following allegations made by [REDACTED] that (Appendix I):

- NRG violated the NYISO's Open Access Transmission Tariff and/or Services Tariff (the "Tariffs") by bidding energy from AK 2 into the DAM and then informing the NYISO that the unit would not be available to satisfy the day-ahead schedule that resulted from NRG's bid;
- NRG violated the Tariffs by not responding to the SRE Con Ed requested on January 19, asking that AK 3 run on January 20;
- NRG refused to operate the units in order to either (a) avoid consuming expensive fuel, or (b) to sell to third parties the pipeline capacity and/or fuel that was purchased to run the AK 2 and 3 units;
- The AK plant violated the NYPSC's requirement that units with dual fuel capabilities retain a five day onsite supply of their secondary fuel, and

- The AK plant violated ICAP requirements by not having in place adequate gas supply agreements, interstate pipeline capacity, or Local Distribution Company (“LDC”) pipeline capacity and balancing agreements to permit the unit to satisfy its ICAP obligations.

The NYISO initiated its investigation into allegations on January 28, 2003. The Market Monitoring and Performance Department (“MMP”) spearheaded the investigation with technical assistance from Orion Associates International, Inc. The investigation included a review of documents supplied by NRG and interviews with NRG personnel. It also included a review of NYISO Tariffs and manuals.

The Day-Ahead Commitment

Security Constrained Unit Commitment (“SCUC”) is the algorithm by which units are committed in the DAM. The algorithm commits the most economical generation to meet the load and reserve requirements without violating system limitations, such as transmission constraints. These commitments are financial and generation suppliers enter into them voluntarily (Appendix II). If a day-ahead bid from a Market Participant (“MP”) is selected by SCUC but the MP physically withholds the unit in real time, or the unit is unable to run to meet its DAM commitment, the MP would be required to purchase replacement energy in the real-time market at the spot market price. SCUC scheduled AK 2 to run on January 19, and posted its schedule to the NYISO website at 1024 on January 18. At 1159, after the posting of the day-ahead market for January 19, NRG notified the NYISO that AK 2 was unavailable to run due to lack of gas. Dispatchers at the NYISO were requested by NRG to derate the unit to reflect the unit being unavailable and this removed it from real-time scheduling process for January 19.

Conclusion: NRG’s actions did not violate the Tariffs because the Tariffs permit bidders who receive day-ahead schedules to be able to notify the ISO if those resources with day-ahead schedules will not be available to the real-time energy market, with the understanding that such resources will be subject to spot market energy purchases.

The Supplemental Resource Evaluation

The Supplemental Resource Evaluation (“SRE”) process is a procedure for committing or de-committing system resources outside of the SCUC process. The SRE process is used to address reliability issues that are not modeled in SCUC, post SCUC reliability issues, or for committing system resources with startup times that exceed the SCUC evaluation period. Units committed through the SRE process do not have a financial obligation to purchase replacement energy at spot market prices. Additionally, units committed by an SRE and that are located within any of the New York City load pockets are automatically mitigated to their reference prices. Once an SRE unit begins to receive NYISO base point signals, it is subject to the same performance penalties as any unit on the system. At 1120 on January 19, Con Ed requested that the NYISO commit AK 3 for January 20 to ensure local area reliability as they pertain to NYSRC Local Reliability Rules (see Appendix III). The NYISO initiated the SRE commit process for AK 3 by notifying NRG that the unit was being committed. AK 3, an ICAP provider, was required to respond to the SRE either by submitting bids or notifying the NYISO of an outage, operating issue, or a temperature derate (Appendix IV). The NYISO was informed by NRG that AK 3 would not be able to comply with the SRE request to run due to lack of fuel. At 1618 on January 19, Con Ed offered NRG gas to run AK 3. NRG’s on-shift hourly scheduler initially refused the offer, but upon reaching and conferring with a supervisor with authority to purchase gas by phone, shortly after 1700, notified the NYISO that he would accept Con Ed’s offer of gas and run the unit. At 1723, Con Ed rescinded its SRE request to start AK 3; subsequently AK 3 did not run.

Conclusion: NRG’s actions did not violate the Tariffs. As explained above, when an SRE process is initiated, owners of ICAP facilities must either bid into the in-day market or indicate that they are unable to bid in response to the SRE request due to an outage, other operational issues, or a temperature related derating.

Arthur Kill 2 and 3 Operational and Gas Status

NRG documents were reviewed and plant staff was interviewed to test NRG's claims regarding the operational capability of AK 2 and AK 3 over the long weekend of January 18 – 20, 2003 (January 20, 2003, was the Martin Luther King, Jr. holiday). The NYISO team learned that the maintenance that was conducted during the weekend was in keeping with general industry practices to ensure reliable plant operations and would not have impeded the operation of the plant. On January 20, a leak on AK 2 was repaired. This leak was initially identified on January 2, but only had a nominal impact on plant operations. The repair work on this leak was completed at 1442 on January 22 (Appendix VII). The leak repair work that was performed followed general industry practices. The audit team has concluded that AK 2 and AK 3 were capable of operating throughout the long weekend of January 18 – 20 had NRG procured sufficient gas to operate the units.

The documents NRG supplied to the NYISO team show that NRG did not submit gas nominations for either January 19 or 20 although they had submitted DAM bids for AK 2 and AK 3 for both days (Appendix VIII). NRG explained that it was their practice not to submit nominations for a weekend for the Arthur Kill units if the units had not been selected to run during the preceding week. Since NRG did not procure gas for either of the days in question, they would not have had gas to resell on the gas spot market.


Texas Eastern Transmission Corporation (TETCO), a unit of Duke Energy Gas Transmission, owns one of the major interstate gas pipelines that services New York City. NRG has a contract for capacity on this pipeline (Appendix IX). The documents reviewed and interviews conducted by the NYISO team give no indication as to the availability of the TETCO capacity owned by NRG; namely, whether NRG had sold their capacity on this pipeline. However, regardless of the status of this capacity, NRG would not have been able to deliver gas to the Arthur Kill facility through the KeySpan system without submitting nominations to KeySpan. Taking gas off the KeySpan system without first nominating the gas from the TETCO pipeline, would have resulted in NRG incurring heavy penalties due to the high demand for gas and the limited gas resources available on January 19 and 20.

Conclusion: The team verified that, had NRG procured gas, the units would have been operational. Additionally, the team evaluated NRG's gas procurement practice and determined that the NYISO's Tariffs were not violated under the facts presented. Had Adverse Conditions occurred over the weekend of January 18 – 20, 2003, NRG's actions might have resulted in NRG being unable to follow NYISO operating instructions—a potential violation of § 5.4 of the Services Tariff.

The New York Public Service Commission Dual Fuel Requirement

Since acquiring the Arthur Kill units, NRG received gas transportation services from KeySpan Energy Delivery, New York (formerly Brooklyn Union ("BUG")). NRG pays for services and abides by service requirements as directed by BUG. On August 24, 2000, the State of New York Public Service Commission issued an order directing utilities to file revised interruptible service tariffs.¹ NRG is not aware of any change to the service requirements of BUG resulting from this order and was not notified by BUG that this or any PSC order required changes to operating procedures.

¹ CASE 00-G-0996 – In the Matter of Criteria for Interruptible Gas Service Order Directing Utilities to File Revised Interruptible Gas Service Tariffs - Issued and Effective August 24, 2000.



Conclusion: The NYISO is not responsible for enforcing the NYPSC's dual fuel requirements. However, the NYISO is not aware that NRG has violated those requirements.

The Installed Capacity Requirements

The ICAP obligation for AK 2 for January 2003 was 352.5 MW (Appendix XI). The unit bid 352 MW of capacity into the DAM for January 19 and 20 over all hours. The unit was selected in the DAM for January 19 for HB 11-23. NRG made the unit unavailable on January 18 at 1159 for January 19 for HB 11-23. Evaluating NRG's decision to declare the unit unavailable based on its inability to procure gas for AK 2 involves two provisions in section 5.12.7 of the Services Tariff relating to an ICAP Supplier's obligations. While it is not the intent of the tariff and the ICAP program to allow the conduct found in NRG's case, the two provisions create ambiguity that in turn makes a finding of violation difficult to sustain. However, recent changes to the ICAP Manual make it unlikely that NRG would be able to repeat this conduct because they make clear that the only valid reason for a declaration of "unavailability" is an outage, and a lack of fuel would not qualify. We also note that, had Adverse Conditions occurred over the long weekend of January 18 – 20, 2003, NRG's actions might have resulted in NRG being unable to follow NYISO operating instructions—a potential violation of § 5.4 of the Services Tariff.

NRG's ICAP obligation for AK 3 for January 2003 was 507.2 MW. NRG bid 507 MW of AK 3 capacity into the DAM for January 19 and 20 over all hours but was not selected to run by the SCUC. On January 19, based on a Con Ed request, the NYISO initiated an SRE to commit the unit for January 20. As an ICAP provider, NRG had to either submit bids for the unit in response to the SRE or notify the NYISO of an outage, operating issue, or a temperature derate. NRG initially notified the NYISO of an operating issue, the lack of gas, and later, after agreeing to Con Ed's offer to make gas available for AK 3, submitted a bid for that unit.

The rules that govern ICAP do not explicitly address the obligation to procure sufficient fuel to run an ICAP facility. However, the tariff and the NYISO's Procedures require ICAP providers to either bid into the DAM or to declare an outage. NRG submitted bids into the DAM for both of the Arthur Kill units, and we have determined that both of these units were capable of operating over the relevant period, had NRG procured sufficient fuel for the units to operate.

Conclusion: NRG's actions during this period did not violate any express terms of the Tariffs as in effect at the time.

Summary

Based upon the documents provided by NRG, interviews with NRG staff, and a review of the Tariffs, the NYISO team found that the actions of NRG during the weekend of January 18 did not violate the Tariffs or agreements in place at that time.

Appendices

- I. Letter from [REDACTED] dated January 27, 2003
- II. NYISO Tariff – DAM rules
- III. SRE rules for Local Reliability
- IV. ICAP rules for responding to an SRE
- V. NYISO Tariff – Unit obligation under DAM commitment
- VI. NYISO DAM rules
- VII. [REDACTED] Report dated April 4, 2003
- VIII. KeySpan/NRG Bill for January
- IX. NRG Email
- X. NYPSC Order
- XI. ICAP Obligations for January, 2003